

REMARKS

This amendment begins by addressing in turn each of the rejections and arguing that a proper understanding of the specification and the prior art overcomes each rejection without the need to amend any of the claims.

In view, however, of the Examiner's suggestion that claims 2 -3 would be allowable if rewritten to overcome the rejections by making them independent claims, a new set of claims, starting with claim 68 brings all the limitations of claims 1 and 2 into an independent claim 68 from which the subject matter of claims 69 - 86 depends in exactly the same manner as claims 3 - 20 depended from claim 1. Thus new claims 68 - 86 are allowable according to the last office action.

Similarly, element from allowed claim 61 have been brought together with claims 21, 22, 64 and 65 into new claims 87 - 90 to present additional claims having elements that are already conceded to be allowable over the prior art. Thus claims 87 - 90 are also allowable according to the last office action.

Claims 1-22 (not 21) and 61-65 are pending in the application. Claims 30-60, 66 and 67 are withdrawn from consideration. Claims 61-63 are allowed. In the last office action claims 1-21, 64 and 65 were rejected. Claim 22 was not rejected and may have been overlooked. For present purposes we will assume it has been rejected for the same reasons as its parent, claim 21.

In the last office action, the Examiner acquiesced in the arguments to overcome the prior art and withdrew the previous rejection. However, new grounds of rejection were made in view of Perkins patent 6,106,457. In particular

claims 1, 7, 19, 21 were rejected as anticipated by Perkins '457;

claims 4 - 6 were rejected as obvious over Perkins '457 in view of Fraden 5,163,418;

claims 8 - 18 were rejected as obvious over Perkins in view of Muraki 5,463,497;

claims 20, 64 and 65 were rejected as obvious over Perkins '457 in view of Perkins 6,010,450.

Claims 1-20 were rejected under 35 USC 112 as not distinctly claiming their subject matter because of the reference in claim 1 to "all cones positioning their respective windows as the same distance from said imaging device" in contrast to the distinction between figures 6A-6C and figure 6D.

Claims 61-63 were allowed.

Claims 2 - 3 were deemed allowable if rewritten to overcome the 35 USC 112 objection. The Examiner indicated his reason for allowance of claim 2 as follows:

Claim 2 defines a feature of at least one cone has multiple colours around its transparent window permanently in the field of view of said imaging device to aid in the calibration of said imaging device. This feature in Claim 2 is not taught or suggested by the art of record.

The 112 rejection:

The Examiner has objected to the limitation in claim 1 that has "all cones positioning their respective windows as the same distance from said imaging device" in contrast to the distinction between figures 6A-6C and figure 6D. The specific objection is lack of an antecedent basis for that limitation. Figure 6D, however, depicts photomap cone 201, also referred to in the specification as the wide angle cone. The specification makes clear that the cone depicted in Figure 6D does not have a window.

Indeed, the specification refers to windows for each of the cones of Figures 6A-C, but identifies “the photomap cone 201 having a wide-angle adapter lens 210 in place of a window.” (See paragraph spanning pp. 20-21.) Claim 1 recites “at least two cones ... each having a transparent window for bearing against an area of skin”. It cannot be referring to the cone of Figure 6D since for that cone is no window, Thus all of the cones recited in claim 1 (e.g. those corresponding to Figures 6A-C) do indeed have their respective windows at the same distance from the imaging device. This explanation is believed to overcome the rejection under §112.

With respect to the rejection over Perkins '456 of independent claims 1 and 21, the Examiner relies upon Perkins' figure 14 numerals 740 and 996 as disclosing cones positioning their respective windows at the same distance from the imaging device. To reach that conclusion the Examiner treats different interchangeable heads as cones. The two instrument heads 740 and 742 of Perkins are respectively a dermatological instrument head and a magnifying instrument head. Although the dermatological head 740 has a skin contacting window 966 (see Perkins figure 29), the magnifying instrument head 742 does not have such a window that bears against an area of skin, as may be seen from figure 33. Figure 33 identifies 976 as an illumination assembly which projects a bright light. It also identifies 996 as the distal portion of a lens assembly having adjustable optics 992 and a lens housing 994. In order for the lens housing to view a surface illuminated by the illumination assembly 976, the instrument head 742 has to be held back from the surface to be viewed. Thus Perkins' instrument head 742 teaches a structure totally different from the cone configuration of the present invention and does not meet the claim requirement that a transparent window bears

against an area of skin while an imaging signal is generated from light derived from the area of skin. If the lens housing 996 were pressed against the skin, the illumination from the illumination assembly could not reach the lens and would thus not reach the imaging device.

In particular, in the present invention the need to refocus for the different cones is avoided by having their windows at the same distance from the imaging device, whereas in Perkins the device specifically requires adjustable optics that will be refocused. Further, in addition, a careful inspection of figure 14 does not show the element 996 at the same distance from the imaging device as the window of instrument head 740. There is simply no teaching in Perkins that cones with windows should have those windows at the same distance from an imaging device.

Accordingly claim 1 and its dependent claims 2 - 20 are not anticipated by Perkins '457 nor are they made obvious by Perkins in combination with other references, since none of those references supply the missing elements just discussed.

Independent claim 21, and thus its dependent claim 22, is similarly not anticipated nor made obvious by the cited references because it also requires a transparent window for bearing against an area of skin and different cones positioning their windows at the same distance from the imaging device.

Independent claim 64, and its dependent claim 65, was deemed obvious in view of Perkins '450, which the Examiner used to show that internal reflection had been taken into consideration for the planar window 58 of Perkins '450. The conclusion drawn by the Examiner was that since Perkins '450 was concerned only with the incident angle of the light beam, therefore the thickness of the window must be a mere

matter of design. What the Examiner did not note was that Perkins was concerned with preventing an internal reflection of light from the light emitting source casting its image onto the optical window. That is what Perkins means at col. 5, line 64 - col. 6, line 6, where it states: "This light is therefore redirected due to the refractive index of the light transmissive material, which gives total internal reflection, so as to impinge upon the reflective inner walls 56 ... which insures that the image of the circumferential ring of light emitting ends ... is not viewed as a reflected image on the optical window"

Perkins is not concerned, as is the present invention, with the internal reflections in the optical window itself of the light emitted from the skin of the subject. (See the lengthy description of this effect at page 29 of the specification where Figure 25 is discussed in detail.) Those internal reflections are affected by the thickness of the window as described in the present invention. It is therefore an aspect of the present invention that the thickness of the window is not merely a design choice, but contrary to the prior art the present invention recognizes the advantage in keeping the window thicker rather than thin, something that Perkins does not suggest or appreciate.

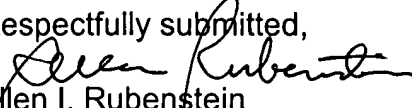
The reference to total internal reflection in the present claims is completely different to the total internal reflection that has preoccupied other inventors. Here the concern is not with reflection of the incident illumination from the light sources. That can be managed by controlling the angles of illumination. The present invention presents the discovery that the light reflected by the pigmented lesion and by the surrounding skin are active components of the total illumination. The consequence of this is that if the window is thin, a light-colored lesion will produce a lighter image than it should. This arises because the light reflected by the lesion will suffer total internal

reflection within the window and will brighten the image that is recorded. Light-colored skin around the lesion will have the same effect. A dark lesion or darker skin around the lesion will, by the same process, cause the image to be darker than one would expect. By employing an appropriate window thickness this illumination enhancement by the total internal reflection is kept low so that the color of the image is not distorted. Reliable diagnosis by the computer can then be assured.

A word may be said about the Fraden reference, which the Examiner relied upon for the rejection of claims 4 - 6, even though those claims are clearly allowable as dependent from claim 1 for the reasons given above for claim 1. The Examiner cited Fraden for using a film that the Examiner deemed the equivalent of a non-transparent film. However the present invention used a non-transparent cone to operate in a reflected light mode, not in transmitted light or IR as is the case for Fraden. Fraden cannot employ a reference reflector because his device is for detecting IR emissions and not light reflections as is the present invention. This feature is an important distinction from the prior art because it allows creating fully calibrated images that can be employed for long term monitoring of lesions.

For the reasons stated, the application is now in a condition for allowance. The Examiner is authorized to charge any amount that may be due as a result of this amendment to account 07-1730.

Respectfully submitted,

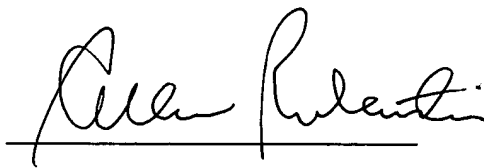

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Dated: November 8, 2004

CERTIFICATE OF MAILING

I hereby certify that the enclosed correspondence relating to patent application
Serial No. 09/473,270, filed 12/27/1999, is being deposited with the United States
Postal Service as First Class Mail in an envelope addressed to The Assistant
Commissioner for Patents, Washington, DC 20231, on November 8, 2004

A handwritten signature in black ink, appearing to read "Allen Rubenstein", is written over a horizontal line.

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